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Various authors (Virchow, Danielli, Joest) have spoken of these colored decorative marks as true tattooing. Boggiani, however, by a closer examination of them, reaches the opinion that they are paintings. The materials used are various, as ferrous oxide, cinnabar and the juice of the *Bixa orellana*; but that which produces the peculiar tattoo-like appearance is the juice of the *Genipa oblongifolia*, a sort of indigo fluid, blue at first and turning black on exposure. It has a slight corrosive action on the skin, attacking the tissues of the epidermis, and thus gives to the marks which it leaves singular permanency, and the appearance of tattoo cicatrices.

The article of Boggiani is well illustrated, and is conclusive in establishing the prevalence throughout large areas in South America of the use of this plant.

#### ÆSOP IN AZTEC.

NATIVE Mexican, that is, Nahuatl or Aztec literature, is increasing to a respectable extent. Scarcely a year passes that some product of the printing press appears in this ancient and rich language. One of the latest is the Fables of Æsop, published by Dr. Antonio Peñafiel, from a sixteenth century translation. It is a pamphlet of 37 pages on good paper and in clear type.

No certainty has been reached as to the translator. It may have been Father Sahagun, but I am inclined to Father Bautista or some of his associates in the college at Tlatelolco, where the native youth were instructed in humanities and religion. It was probably intended as a reading book for them, and the forty-seven fables it contains, rendered into the Nahuatl of that early day, may still be followed as models of grammatical purity.

#### THE READING OF QUIPUS.

It is well known that the ancient Peruvians had a method of preserving their records by means of strings, varied in hue,

of different lengths and texture, and knotted in sundry designs. The early historians offer no clear explanation of them, and differ widely in estimates of their value as records of facts and ideas. They were called *quipus*—cords.

It appears that they are still in use, and Dr. Uhle, in the *Ethnologisches Notizblatt*, of the Museum of Ethnography, Berlin (Heft 2, 1895), explains several which he found among the shepherds about Lake Titicaca. They relate to the animals under their care. The color indicates the sex, or some other special series. The system is decimal, the position indicating the tens and hundreds. Those examined proved to be merely mnemonic aids, based chiefly on arithmetic ideas, and apart from these unintelligible by themselves. Doubtless the ancient *quipu* readers extended their use to all the needs of life in this direction, but their principles of interpretation must have been the same.

D. G. BRINTON.

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#### SCIENTIFIC NOTES AND NEWS.

##### ASTRONOMICAL.

THERE are numerous cases in astronomical literature where astronomers have rejected certain observations because they did not agree with their own. But it is really not often that we find an astronomer gravely rejecting an observation simply because it *did* agree with his own. In one of his recent double star orbit discussions, Dr. See, of Chicago, omitted to use certain observations of Prof. Knorre. Dr. Brendel objected to this omission on the part of Dr. See, in a recent number of the *Astronomical Journal*. Now Dr. See replies, in the same journal, that he omitted Prof. Knorre's results because they were nearly identical with his own! But Dr. See's reputation as an astronomer is so good that we fear he will really have to find a better reason for rejecting observations than the mere fact of their agreement with his own. The whole thing looks like a comedy of errors to which the present note will perhaps add a final amusing scene. H. J.

THE London *Times* states that the President of the Royal Astronomical Society has announced the plans of the permanent eclipse committee in view of the eclipse of the sun occurring on the 9th of August, this year, and that two new instruments to be used in observations have been shown to members of the Society. One of these, the *cœlostæt*, suggested by M. Lippmann, in the *Comptes Rendus*, has been made on the advice of Dr. Common, who has contributed the plane mirror of the instrument. Its purpose is to deflect the rays of the object into a fixed telescope, instead of having to put the telescope itself in motion. The second instrument is a modification of the Foucault heliostat, by Captain Hills; and this, in similar manner, deflects the image rays. It is said that Dr. Common will accompany the expedition to Vadsö, and will take photographs, with a long axis mirror or lens, of the lower portion of the corona. The telescopes and the spectroscopes will be the same as formerly employed, for the sake of continuity. Two steamships will be sent from London to Vadsö on the Varanger Fiord, which will afford tourists as well as men of science a convenient opportunity to witness the eclipse.

#### RUSSIAN SCIENCE NEWS.

THE Imperial Academy of Sciences of St. Petersburg has elected as honorary members, Hermite, Weierstrass and Pope Leo XIII; as corresponding members, Darboux, Klein, Fuchs, Jordan, Picard, Poincaré.

THE academicians Sonine and Markov have commenced an edition of the collected works of Pafnooti Lvovich Chebishev, in Russian and French. All papers written in Russian will be translated into French, and *vice versa*. A translation of the greatest work of Lobachévski, his 'New Elements of Geometry with a Complete Theory of Parallels,' is so much desired by men of science that at the Centenary Anniversary of the Institute of France Sophus Lie and Darboux addressed to the representative of the Russian Academy of Sciences the request that all the works of Lobachévski be published in French. Without waiting for the effect of this request, negotiations have been set on foot

looking to the publication in Paris by Gauthier-Villars or A. Hermann, of a French translation furnished from America but edited by Professor A. Vasiliev, the great Russian authority on Lobachévski.

VASILIEV'S address on Lobachévski has been reproduced in German by Prof. Friedrich Engel, of the University of Leipzig, who acknowledges his indebtedness to Halsted's English translation, reviewed in this journal March 29, 1895.

K. A. ANDREYEV, President of the Mathematical Society of Charkov, has issued an important monograph on Vasili Grigorevich Imshenetzki, with a handsome portrait. It includes biography, critical estimate and bibliography.

GEORGE BRUCE HALSTED.

#### GENERAL.

THE names of the members of the general committee of the Huxley Memorial have now been published. The total number is about 800, of whom about 50 are Americans. We have not learned of any steps having been taken to organize an executive committee in America, and it is not clear whether intending subscribers should wait for this or should send their subscriptions to England. Donations may, however, be sent to the Treasurer, Sir J. Lubbock, or the bankers, Messrs. Robarts, Lubbock & Co. (15, Lombard Street, E. C.), or to the Honorary Secretary, Prof. G. B. Howes (Royal College of Science, South Kensington, S. W.).

THE French government has voted £400 towards the fund for erecting a statue in Paris to the memory of Pasteur; the fund exceeds the expense, and the surplus is to be used for a bust of Pasteur in the Pasteur Institute. As already stated in this journal, there have also been formed committees at Chartres and Dôle for the purpose of erecting statues to the memory of Pasteur in those towns. The French Chamber of Commerce in London would be glad to receive subscriptions for the monument to be erected in Dôle, the birthplace of Pasteur. Subscriptions may be sent to the President, M. Marius Duché, Monument House, E. C.

MR. ROBERT T. HILL, of the United States Geological Survey, sailed on the 18th of January upon the third of a series of geological recon-

naissances of the tropical American region, which he is undertaking under the auspices of Prof. Alexander Agassiz. He will visit many points of geologic interest concerning which knowledge is much needed. The plan of these researches is to acquire accurate detailed knowledge of typical regions in order that the whole of the complicated history may be ultimately interpreted. Mr. Hill's report upon the geology of the Isthmus of Panama and adjacent regions of Costa Rica, embodying the results of last winter's investigations, is nearly completed, and will deal minutely and thoroughly with the complicated and interesting geology of the region.

DR. DAVID STARR JORDAN was elected President of the California Academy of Sciences at its recent annual meeting.

THE next annual meeting of the British Medical Association will be held in Carlisle.

THE memorial to John Rae, the Arctic explorer, which has been executed in London by Mr. Whitehead, has been placed in St. Magnus Cathedral, Kirkwall. The monument stands opposite that of Baïke, the African explorer.

At the annual meeting of the American Society of Naval Engineers, Chief Engineer E. D. Robie was elected President, and passed Assistant Engineer F. C. Bieg, Secretary and Treasurer.

*Natural Science* states that the Geological Survey of India has begun a folio publication entitled *Quarterly Notes*, and the Geological Survey of Mexico has begun a *Boletín de la Comisión Geológica de México*.

At the annual meeting of the American Geographical Society held at Chickering Hall, New York, on January 13th, Judge Charles P. Daly was elected President. The Society has received the legacy of \$100,000 bequeathed by the late General George W. Cullom, to provide for the construction of a fire-proof building.

THE latest advices from Honolulu state that after a pause of thirteen months Kilauea is in active eruption.

ACCORDING to the New York *Evening Post* preparations are in progress at Glasgow University for celebrating Lord Kelvin's fifty years' connection with that body.

THE gold medal of the Royal Astronomical Society of London has been awarded to Dr. Seth C. Chandler for his work on the variation of terrestrial latitude and variable stars.

PROF. E. RAY LANKESTER has been appointed a Vice-President of the Royal Society.

WE learn from *Nature* that the inhabitants of Zürich have rejected, by 39,476 votes to 17,297, a proposal submitted to them for the absolute prohibition of vivisection. On the other hand, a counter proposal of the Grand Council in favor of the protection of animals with due satisfaction to the demands of science was adopted by 35,191 votes to 19,551.

A CABLEGRAM to the daily papers states that Eyvind Astrup, the Norwegian explorer who was with Lieutenant Peary in Greenland, is missing. He started to make an expedition in the mountains during the Christmas holidays, and has not since been heard from. A party has been formed to go in search of him.

MESSRS. MACMILLAN & Co. have in preparation a *Dictionary of Philosophy and Psychology*, edited by Prof. J. Mark Baldwin of Princeton.

THERE will be held at Innsbrück, from May to October of the present year, an International Exhibition of Hygiene.

THE late Baron Larrey has left a bequest to the Academy of Sciences for an annual prize of \$5,000 for the best treatise by an army doctor on any question of medicine, surgery or sanitation.

It is stated that \$22,500 have been subscribed towards defraying the expenses of the meeting of the British Association in Toronto in 1897: \$10,000 by the Dominion government; \$7,500 by the Provincial government, and \$5,000 by the corporation of the city.

THE Vienna *Presse*, the London *Standard* and other daily papers report what purports to be an extraordinary discovery by Prof. Röntgen. It is claimed that he has found that the ultra violet rays from a Crookes' vacuum tube penetrate wood and other organic substances, whereas metals, bones, etc., are opaque to them. It is said that he has thus photographed the bones in the living body, which would be one of the most important advances that has ever been made in surgery. The photographs

have been sent to Vienna and are in the hands of Prof. Boltzmann, who has, it is said, accepted the discovery, though he has not succeeded in his attempt to repeat the experiment. In spite of apparently absurd statements concerning the action of the ultra violet rays, it is not impossible that substances such as metals, which are good conductors of heat, should absorb the ultra violet rays, while substances such as wood, which are bad conductors of heat, should transmit them. Prof. Röntgen is professor of physics at Würzburg, and any experiments published by him would be accepted without hesitation.

WE learn from the *International Medical Magazine* that the Royal Academy of Medicine of Belgium offers prizes of 5000, 8,000 and 25,000 francs for the best researches on the diseases of the central nervous system with special reference to epilepsy. The competition closes on the 15th of September, 1899. Smaller prizes are offered in 1896 on subjects pertaining to pharmacology and the blood.

PROF. CAMILLE FLAMMARION reported to the Paris Academy on December 30th further experiments on the effects of colored glass on the growth of plants; he found the order in the development of height in sensitive plants for different glasses to be: red, green, transparent, blue. The plants grown under the transparent glass, however, surpassed in vigor those grown under the green glass. He secured similar results, but less marked, with geraniums, strawberry plants, pansies, etc. In the discussion that followed, M. Armand Gautier stated that he had found that vegetables grew well under red light, less well under yellow light, still worse under violet light and that they died under green light. He had placed pots of flowers in a current equal to that from three Bunsen cells for two and a-half months, and had found that the plants growing in the soil through which the currents passed had grown twice as much as those placed under the same condition, but without the current.

IT is stated that it is proposed to build a railway or elevator to the summit of Mount Blanc in a manner similar to that planned for the Jungfrau. A tunnel would be built beginning at a height of 2,200 meters above the sea level

and the length of the shaft would be 2,539 meters. A hotel would be built at the summit and the entire ascent would occupy only thirty minutes.

THE capital necessary for the purpose of sending an expedition to the Antarctic regions with a view to carrying on whale and sea fishing has been subscribed in London. It is proposed to send out two whaling steam vessels of 300 or 400 tons, and, we understand, also one or more of the smaller steamboats which are used by the Norwegians for the capture of the blue whale. If £5,000 can be collected to defray the expenses Mr. Borchgrevink with eight or ten companions will accompany the expedition with a view to scientific research.

IT appears that in the French expedition to Madagascar the mortality from fever amounted to 5,000 or one-fourth of all who took part in the expedition; fifty per cent. of the whole number were seriously ill, and of twenty-five per cent. remaining, scarcely any entirely escaped. Only seven men were killed in battle. In the Japanese-Chinese War 3,148 of the 200,000 Japanese soldiers engaged in the contest died as the result of disease, and 969 as the result of injury in battle.

A CORRESPONDENT of the *London Times* states that the war against rabbits in Australia seems to have had but little result. Since 1883 New South Wales, alone, has spent over \$5,000,000 in the attempt to subdue or exterminate them, but apparently without effect. A reward of \$125,000 has been offered by the New South Wales government for an efficient method of getting rid of the pest. The final outcome of Royal Commissions, of intercolonial conferences, and of the testing of every practical method of extermination, is that the most effectual method of dealing with the evil is found to be the construction of rabbit-proof netting, by means of which the animals can be kept from areas not yet infested; can be shut off from food supplies; and can be more effectually dealt with locally. In New South Wales alone 15,000 miles of rabbit-proof netting has been erected, but in this colony 7,000,000 acres have been abandoned largely owing to the gravity of the pest.

*Natural Science* has adopted with its January number the plan recently reported in this journal of underlining the most important word or words in the title of each article, and of giving at the head of the article the index number under which the article is placed in the Dewey system of classification. The index number, supposing a satisfactory system of classification can be agreed upon, would seem to satisfy the requirements of bibliographical classification. The significant word in the title is usually easy to discover, and when the title is well chosen all the words are apt to be significant. Thus the articles in the current number of *Natural Science* on 'The Endeavor After Well Being,' 'The Constantinople Earthquake of July 10, 1894,' and 'The Perth Museum of Natural History,' have all the words excepting the articles and prepositions partly or entirely underlined. It might, however, lead authors to be more careful in the choice of titles if they considered the necessity of underlining the words significant of the contents of the article.

#### UNIVERSITY AND EDUCATIONAL NEWS.

CONTRACTS have been awarded for the construction of the Schemmerhorn Hall of Natural Sciences and the Hall of Physics for Columbia College. The buildings will be ready for occupancy in the summer of 1897. The Trustees of Barnard College, at a meeting held on the 17th ult., accepted the plans and specifications for the proposed new building to be erected at the Boulevard and 119th street. The building is to be 200 by 160 feet, and will cost about \$500,000.

THE Council of the University of the City of New York has decided to continue the summer courses inaugurated last year. The session will be held at University Heights from July 13th to August 21st. Courses will be offered in ten departments.

PROF. J. H. VAN'T HOFF, the brilliant chemist, now at Amsterdam, has resigned, probably to take a place created for him in the University of Berlin. The city of Amsterdam and the Dutch government made every effort to prevent him from leaving Holland. The authorities of the University offered to appoint an assistant professor whose duty it should be to give all the

lectures and attend to all examinations. All that they required of Van't Hoff was the giving of two lectures a week. It is doubtful whether any professor has ever received a more flattering offer.

THE Boston *Transcript* states that some years ago J. H. Armstrong, of Plattsburg, deeded a considerable property to Union College, but retained a life interest in it. On January 2d of this year he died, and by his will added to the gift, which now amounts to \$100,000. Mr. Armstrong was a lawyer, and it was his intention that the department of sociology should be benefited by his will.

THE Legislature of Massachusetts has passed the bill appropriating \$25,000 to the Massachusetts Institute of Technology.

MRS. JOSIAH N. FISKE has given Barnard College \$5,000 for the foundation of a scholarship which will be open to competition.

#### DISCUSSION AND CORRESPONDENCE.

##### MARSH GAS UNDER ICE.

AN interesting chemical experiment, quite new to me, was performed by a party of skaters in the neighborhood of Baltimore a few days ago. It is possible that it has been performed before, but I have not yet found any one who has seen or heard of it, and I therefore think it may interest the readers of SCIENCE. The skaters were on a large artificial lake upon which remarkably clear ice had formed. In various places white spots were noticed in the ice, suggesting, as one of the skaters said to me, 'air bubbles.' Some one bored a hole through one of these white places, and applied a flame to the gas, which took fire. This led to further experiments, and it was found that, by boring a small hole, a long thin jet of flame could be obtained, and this continued for some time. The gas was, of course, marsh gas, formed by the decomposition of the vegetable matter at the bottom of the lake. The above method of demonstrating the formation of this gas in nature is, from the æsthetic point of view, a great improvement on the usual method described in the text-books, which consists in stirring a pool of stagnant water with a stick, and collecting the gas that rises to the surface.